DOCUMENT RESUME

ED 140 332 CS 203 470

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TITLE The Effect of Illustrations on Children's Nonverbal Responses to Literature.
PUB DATE [77]
NOTE 14p.; Report prepared at University of California, Riverside; See related document, ED119232

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Childrens Literature; Color; Educational Research; *Illustrations; Language Arts; *Literature Appreciation; *Nonverbal Communication; Primary Education; *Response Mode
IDENTIFIERS *Reader Response

ABSTRACT

A sample of 118 children in kindergarten through grade three participated in this study of the effects of illustrations on pupils' nonverbal responses to the story "The Giving Tree." Children in the experimental group were shown none of the illustrations in the book; the control group were shown all of the original illustrations. After hearing the book read aloud, both groups were asked to select three crayons and to draw whatever came to mind during a five-minute period. Analyses of the colors selected and of the complexity of the content indicated no significant differences between the drawings by the experimental and control groups. Informal observations suggested that the drawings of the experimental group were "more imaginative" than those of the control and that the younger children tended to focus on the tree, while the older children focused on a figure of a person. (AA)

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The Effect of Illustrations on Children's Nonverbal Responses to Literature

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The Problem

The belief that teachers should listen to what children voluntarily say about a work of literature rather than tell children what they should say has a body of supportive research. Purves and Beach (1972) indicate that studies of response to literature, dating back to 1929, tend to establish categories for classifying responses. More recently, Cooper and Purves (1973), Purves (1974), and Lid and Handler (1974) have attempted to popularize the notion that voluntary cognitive and affective responses to literature can be described and evaluated in the everyday classroom setting.

Content analysis has been effectively used in describing the verbal responses of older children and adolescents (Loban, 1954; Squire, 1956; Purves and Rippere, 1968). But what about young children in the primary grades who lack the fluency of their older brothers and sisters? Might their nonverbal responses, specifically, drawings, provide significant information concerning their feelings about literature?

CS 203 472

The Procedure

With this problem in mind, I decided to measure the nonverbal responses of primary school children to the book The Giving Tree (Shel Silverstein, New York: Harper & Row, 1964). The book is a parable of the relationship between a boy and a tree. While the boy is young, he derives simple pleasures from the tree, for example, playing in and around the tree, eating the tree's apples, gathering the tree's leaves. As the boy grows older, he demands more and more from the tree until, in order to escape life, the "boy" fells the tree to make a boat, only to return as a very old man to rest on the tree's stump. The book is generously illustrated--a three color cover (red-green-black) and black and white pictures on each double page. When teachers read stories to children, they normally pause intermittently to reveal the book's illustrations. What I wanted to determine was whether the book's illustrations had any effect on the children's nonverbal responses as shown in their drawings. Two questions were generated:

1. Would children who saw the book's illustrations use more red, green, and black in their drawings than would children who hadn't seen the illustrations?
2. Would children who saw the book's illustrations develop the content of their pictures any differently from children who hadn't seen the illustrations?

Five graduate students, who had studied the transactive response theory (e.g., Cooper and Purves, 1973; Purves, 1974; Lid and Handler, 1974)

assisted in this project. The students numbered 118, were drawn from four grade levels (Kindergarten through grade four) and were assigned to one of two treatments: experimental (no illustrations were shown) and control (all illustrations were shown). Limitations in time, researchers' schedules, and available primary school youngsters demanded that the research be conducted in the classrooms during school. As a result, the experimental and control groups are of unequal size (see Table 1).

Table 1. Distribution by Grade Level

Grade	Experimental	Control	Σ
K	7	15	22
1	9	10	19
2	8	28	36
3	4	37	41
Σ	28	90	118

Student investigators were assigned classrooms. After a get-acquainted session, the investigator read the book The Giving Tree aloud to the class at large. Control groups were shown the book's illustrations; experimental groups saw no illustrations--even the cover was masked. On the students' desks were a blank sheet of paper and eight crayons (red, orange, yellow, green, blue, purple, black, brown). At the conclusion of the story, students were asked to select 3 crayons and draw whatever came to mind during a five-minute period. After five minutes, work was halted and the pictures were collected.

In examining the drawings, the investigator realized that some children used less than or more than 3 colors. These papers were eliminated. Table 2 shows the distribution of students after deselection.

Table 2. Distribution by Grade Level after Deselection

Grade	Experimental	Control	Σ
K	5	9	14
1	9	9	18
2	7	19	26
3	4	37	41
Σ	25	74	99

Results

We proceeded with two types of analysis: the selection of colors and the content of the drawings.

The Selection of Colors

Carefully examining each drawing, we tabulated the number of children using each of eight colors. Table 3 shows the comparative distribution of incidences of color. Since the various groups are of unequal size, the data is reported in terms of percentages of students. Since 25 students in the experimental group and 74 students in the control group used three colors, the total incidences of color would be

3 X 25 and 3 X 74, respectively (75 and 222, respectively). Thus, if 15 experimental students and 65 control students used, for instance, green, the comparative percentages of incidence would be 15/75 and 65/222 or .20 and .29.

Table 3. Comparative Distribution in Terms of Percentages of Incidences of Color Usage, by Grade Level by Treatment

color	Grade Level									
	K		1		2		3		4	
	Exp	Cont	Exp	Cont	Exp	Cont	Exp	Cont	Exp	Cont
*green	.20	.33	.19	.33	.33	.32	.00	.25	.20	.29
brown	.20	.14	.30	.29	.33	.30	.33	.25	.29	.25
*red	.27	.30	.22	.29	.33	.19	.08	.19	.24	.22
blue	.20	.11	.11	.04	.00	.05	.33	.12	.13	.09
yellow	.00	.00	.11	.00	.00	.07	.17	.06	.07	.05
purple	.00	.11	.00	.04	.00	.02	.08	.05	.01	.05
*black	.00	.00	.04	.00	.00	.04	.00	.05	.01	.04
orange	.13	.00	.04	.00	.00	.02	.00	.03	.04	.01
	1.00	.99	1.01	1.00	.99	1.01	.99	1.00	.99	1.00

* Colors evident in the illustrations of The Giving Tree.

Data from Table 3 suggests that, generally, green, brown, and red were the most frequently used colors, regardless of treatment, regardless of grade level. One dramatic departure is the brown, blue, yellow preferences found in the experimental third grade group. However, the "irregularity" of the response might be accounted for by the small sample size.

In addition to reporting the data in terms of percentages of incidences of color, we showed the percentages of students using each of the eight colors. If 15 out of 25 experimental students and 65 out of 74 control stuuents used green, the comparative percentages would be 15/25 and 65/74, or .60 and .88. Table 4. shows the percentage of students selecting each of eight colors.

Table 4. Percentage of Students Selecting Given Colors, by Grade Level by Treatment

color	Grade Level									
	K		1		2		3		4	
	Exp	Cont	Exp	Cont	Exp	Cont	Exp	Cont	Exp	Cont
*green	.60	1.00	.56	1.00	1.00	1.00	.00	.54	.60	.88
brown	.66	.44	.89	.89	1.00	1.00	1.00	.73	.88	.77
*red	.80	.89	.67	.89	1.00	.63	.25	.51	.84	.65
blue	.60	.33	.33	.11	.00	.16	1.00	.32	.40	.24
yellow	.00	.00	.33	.00	.00	.10	.50	.16	.20	.15
purple	.00	.33	.00	.11	.00	.05	.25	.14	.04	.14
*black	.00	.00	.11	.00	.00	.11	.00	.16	.04	.11
orange	.40	.00	.11	.00	.00	.05	.00	.05	.12	.04

* Colors evident in the illustrations of The Giving Tree.

To determine whether significant differences existed in the use of red, green, and black between the experimental and control groups a chi-square test ($p \leq .05$) was run for each of the three colors. Results indicated the following: no significant differences existed in the use of red, green, and black for any grade level or for the entire group.

The experimental and control groups exhibited common response patterns. After examining the data on color frequency, we, first, realized not only that green, brown, and red were the most frequently used colors but they also comprised the most popular 3-color pattern--in both experimental and control groups. In the case of the control group, red and green might have been "borrowed" from the book's cover. But the experimental group may have associated red with apples and green with trees, anyway, in absence of illustrations. Second, black was infrequently used in both groups. Third, both groups used brown. The control group rejected the green tree trunk of the cover, substituting brown. The experimental group may have also associated brown with tree trunks. This is borne out by the tendency, in both groups, to have green and brown trees with red apples.

Content of the Pictures

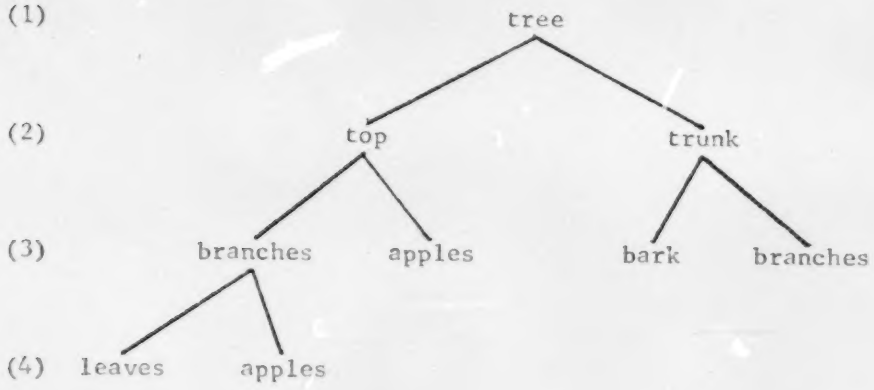
In addition to observing the selection of color, the researchers attempted to analyze the drawings for complexity of content. Inductively establishing categories, we discovered that students tended to develop one or more of these major areas in their pictures: (1) a tree, (2) the sky, (3) the ground, (4) a figure, (5) a boat, (6) a house, and (7) a ladder. Items 1-4 were pictured in the text, items 1, 4, 5, and 6 were mentioned in the text, and 7 was neither pictured nor mentioned.

Investigators then determined the amount of detail occurring in each major area. For instance, one child drew a tree with very little detail:

(1) (child drew a) tree

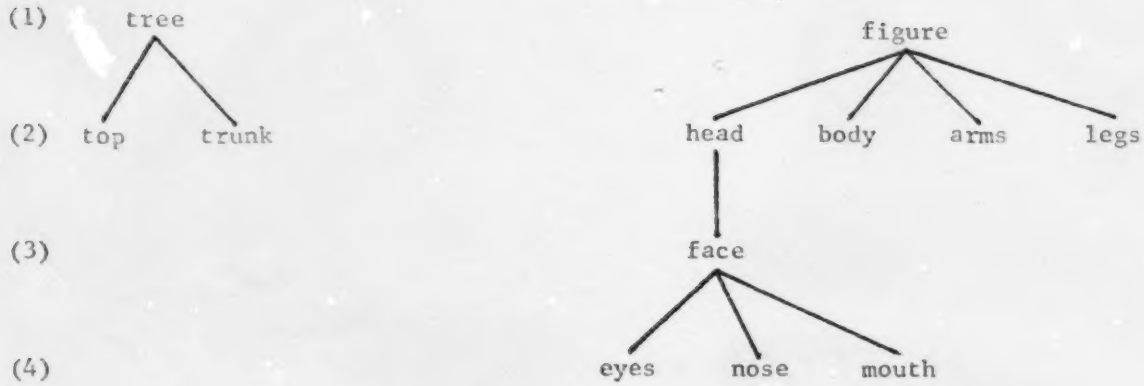
(2) (which had a) top (and a) trunk

Another child drew a tree with more detail:



In comparing the complexity of the two drawings, one could say that the first child had level 2 development and that the second child had a level 4 development.

Most children developed more than one major area in their pictures, as did this student:



and this student:

After analyzing the content of each drawing, we located the area of each picture that was developed to the highest level. We inferred that this area might suggest what part of the story the student focused on. For example, if a student drew a tree in more detail than the figure, we might cautiously infer that the giving tree was more important than the boy.

We found that in both experimental and control groups the tree and the figure were developed in greatest detail. Table 5 presents this comparative detail by grade level.

Table 5. Numbers of Children
Developing Trees and Figures
to the Highest Level, by Grade Level

	Experimental		Control	
	Tree	Figure	Tree	Figure
K	3	1	11	2
1	4	3	5	3
2	4	3	2	8
3	2	2	6	4
Σ	13	9	24	17

To determine if significant differences existed between the two groups a chi-square test ($p \leq .05$) was made by grade level and total group. No significant differences existed.

Conclusions

The results of this study suggest that a book's illustrations may have no effect upon children's response drawings. However, there may be a few informal observations that might become the basis for further studies in this area:

1. Children's drawings in the experimental group were viewed as "more imaginative" than those of the control group, suggesting that illustrations may have a limiting effect on nonverbal response.

2. Younger children developed pictures differently from older children. That is, younger children focused on the tree; older children on the figure. This may suggest that younger children may view The Giving Tree as a story about a tree, not a human being, as may older children.

Further work in this area may clarify the relationship of children's drawings to literature responses.

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